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Optimization of power system station based on programmable logic controller

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Abstract:
In this paper, the power system station had many drawbacks at transient situation which deteriorate the automatic voltage regulator AVR with load frequency controller LFC. Therefore, to enhance this system, the programmable logic controller PLC is the beast solution to solve this problem. The response of AVR andLFCwith PLC make the system fast response and low overshoot without undershoot . the performance of whole system has high accurate with high efficiency.
Key words: power system station, PLC, AVR, LFC.

INTRODUCTION

In the classical system, the AVR is widely used to adjusted the voltage and to decrease and harmonics keeps a continuous voltage to electrical instrumentation with the same load and high reliable power system [1]. Many researchers done a lot of research on PLC with SCADA to enhance the system performance by adjusting voltage and frequency [2] [3]. In addition, thermal plant are also discussed based on plc and Artificial intelligent [4] [5].

PROPOSED METHOD

In this proposed method, PLC is used to optimize the system via corrected PID controller.
The PLC is used to eliminate the over and under shoot as results decreasing the even and odd harmonics. The efficiency of system will be optimize and enhanced. Figure 1 shows the proposed method

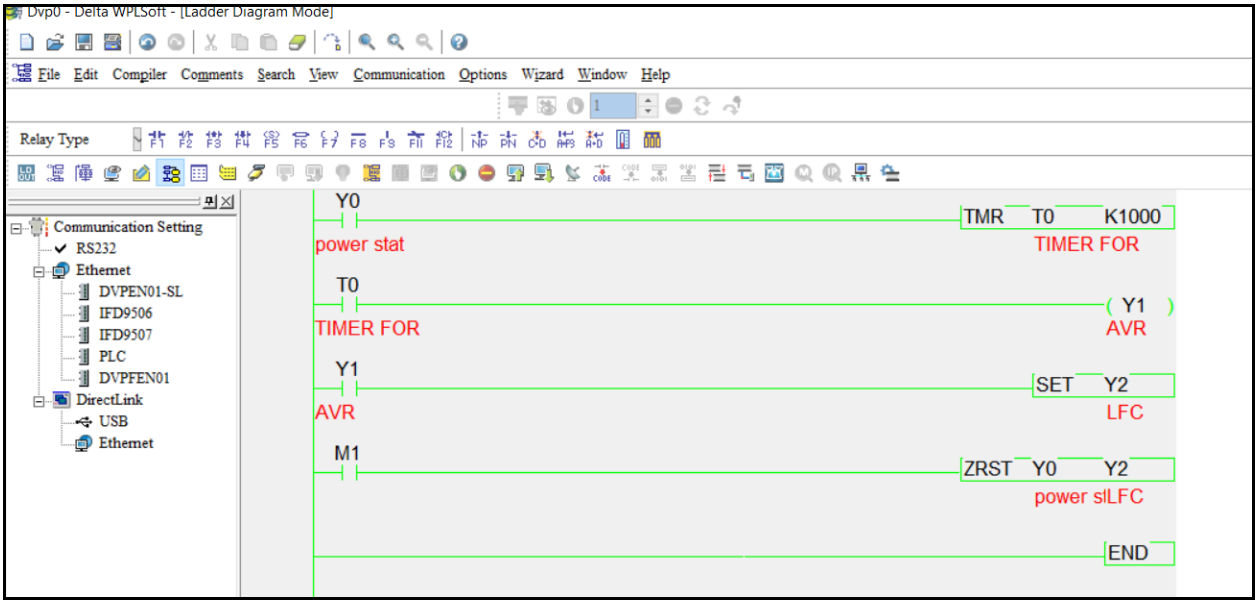
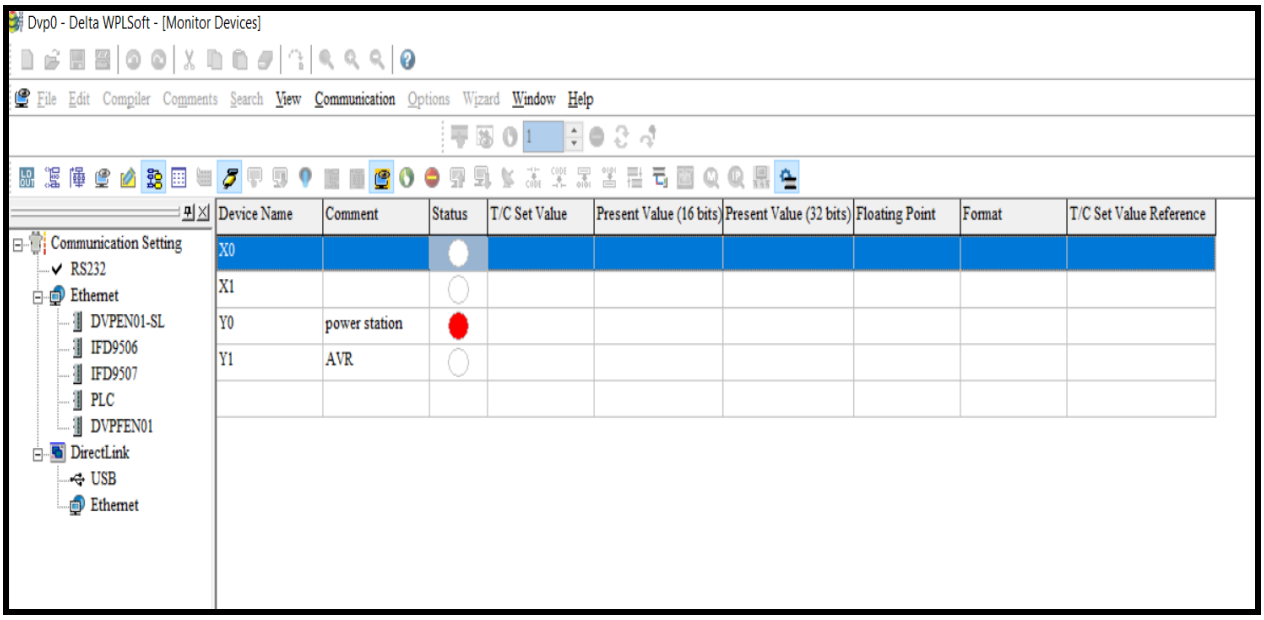
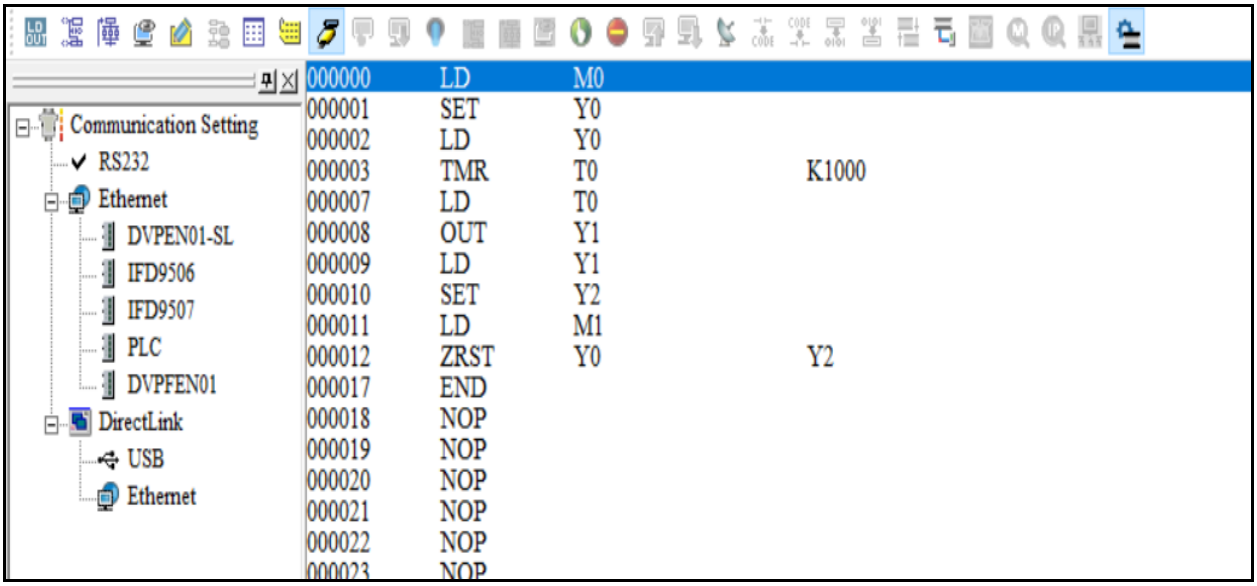


Figure 1: proposed method

Figure 2 show the monitoring device of ladder language and figure 3 shows the instruction list





CONCLUSION

In this proposed method, the PLC behavior as intelligent control to optimize the system performance based on power system station. The efficiency is optimized also therefore the artificial intelligent has the authority over classical system.

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